WHAT IS CLAIMED IS:

1. An overheat protection circuit comprising:

a semiconductor switching element provided in a current path from a power supply to a load and performing operations of bringing the current path into conduction and interrupting the current path; and

an operating-mode control circuit for controlling the semiconductor switching element in a first operating mode in which a conductive operation is shifted to an interrupt operation when the temperature of a temperature detection portion increases and reaches a predetermined interrupt temperature, and in a second operating mode in which the interrupt operation is shifted to the conductive operation when the temperature of the temperature detection portion decreases and reaches a return temperature which is lower than the interrupt temperature by a predetermined value; wherein

the operating-mode control circuit includes a first positive-temperature-coefficient thermistor, a second positive-temperature-coefficient thermistor, and a control element, and using a change in resistance of the first positive-temperature-coefficient thermistor in the first operating mode and a change in resistance of the second positive-temperature-coefficient thermistor in the second operating mode, the operational shift of the semiconductor switching element is controlled by the control element, and each of the first and second operating modes is controlled in the state where both positive-temperature-coefficient thermistors are thermally coupled to the temperature detection portion.

2. An overheat protection circuit as claimed in claim 1, wherein the control element is a control transistor, the first positive-temperature-coefficient thermistor is connected between the base of the control transistor and the output terminal of the semiconductor switching element, and the second positive-temperature-coefficient thermistor is connected between the base of the control transistor and the input terminal of the semiconductor switching element.

3. An overheat protection circuit as claimed in claim 2, wherein the semiconductor switching element is a switching transistor and wherein the collector of the

control transistor is connected to the base of the switching transistor directly or through a current-limiting resistor.

4. An overheat protection circuit as claimed in claim 1, wherein the control element is a control transistor, the second positive-temperature-coefficient thermistor is connected between the input terminal and the output terminal of the semiconductor switching element, and the first positive-temperature-coefficient thermistor is connected between the output terminal of the semiconductor switching element and the base of the control transistor.

5. An overheat protection circuit as claimed in claim 4, wherein the semiconductor switching element is a switching transistor and the collector of the control transistor is connected to the base of the switching transistor directly or through a current-limiting resistor.

6. An overheat protection circuit as claimed in claim 2, wherein a Zener diode is connected to the emitter of the control transistor such that the direction of polarity of the Zener diode is opposite to the direction of polarity between the base and emitter of the control transistor.

7. An overheat protection circuit as claimed in claim 1, wherein the semiconductor switching element constitutes the temperature detector portion and wherein both positive-temperature-coefficient thermistors are thermally coupled to the semiconductor switching element.

8. An overheat protection circuit as claimed in claim 1, wherein the semiconductor switching element defines an interrupt circuit.

9. An overheat protection circuit as claimed in claim 1, wherein a collector and an emitter of the semiconductor switching element are inserted in series in the current path.

10. An overheat protection circuit as claimed in claim 1, wherein the operating-mode control circuit includes a Zener diode and a pair of resistors.

11. An overheat protection circuit as claimed in claim 1, wherein the first and second positive-temperature-coefficient thermistors are thermally coupled to the semiconductor switching element to constitute the temperature detection portion.

12. An overheat protection circuit as claimed in claim 1, wherein the first and second positive-temperature-coefficient thermistors have different Curie points from each other.

13. An overheat protection circuit as claimed in claim 1, wherein the first and second positive-temperature-coefficient thermistors are connected to the semiconductor switching element via resistors.

14. An overheat protection circuit as claimed in claim 1, wherein the second positive-temperature-coefficient thermistor is connected in parallel between the collector and emitter of the semiconductor switching element.

15. An overheat protection circuit as claimed in claim 1, wherein the semiconductor switching element comprises one of a bipolar transistor and a MOSFET.